



The Museum has recently purchased two stereoscopic instruments by the turn-of-the-century French maker Jules Richard. They are his celebrated stereoscopic camera, the 'Verascope', the most successful and enduring design of stereo camera ever placed on the market; and the related stereoscopic viewer called the 'Taxiphote', which probably stands as the most technically sophisticated of all stereo viewers.

Cameras and photography have an important place in the Museum's collection, where they are treated as a serious component of the theme of scientific instruments, while stereoscopes are of course an interesting category of optical instrument. The collection includes some hundreds of stereo photographs, from the 1850s onwards; a number of stereo viewers, both the common hand-held types and the more substantial table-top and 'furniture' models; and a series of classic stereo cameras, from the 1860s to the 1950s. These include an anonymous French camera which imitates the Verascope, and a Jules Richard 'Homeoscope' of about 1905, which is one of the sister models of the Verascope.

Stereoscopes typically are simple devices, so the addition of a Richard Taxiphote to the Museum's collection strengthens its technical interest as well as its representativeness. A signed Richard Verascope was an obvious desideratum for the camera series. As museum objects, such items have both popular and scholarly appeal. But the real impetus to their acquisition by the Museum was the conviction that Richard's instruments are not run-of-the-mill products but pieces of high quality engineering, which merit serious attention from historians of precision technology.

As it happens, the Museum library holds the 1923 English edition of Richard's catalogue of stereoscopic apparatus, which runs to fifty-eight pages, describing both the Verascope and Taxiphote in great detail, along with their numerous variations and accessories. The particular camera recently purchased is identical in all ways to Model 6 as described there.

The camera is made entirely of metal, mostly oxidized brass, and is remarkably compact, with maximum dimensions (excluding lenses) of 140 × 60 × 45 mm. It is also quite heavy, weighing 1.2 kg. Its features include a cable release, a hinged direct viewfinder on the side, a built-in angled viewfinder between the lenses (and viewed from the apparent bottom of the camera), and two circular bubble levels on the top and bottom. In use the camera would normally be mounted on a tripod, and is meant to be mounted 'upside down', so that the numbered settings on the front can be read by leaning over the camera from above.

The fixed-focus, anastigmatic lenses, marked 'SAPHIR BOYER PARIS', are much smaller than normal camera lenses, have a focal length of 55 mm, and can be opened to f4.5, f8, or f16. They are set in a rising front, yet another unexpectedly sophisticated feature, making the camera suitable for serious architectural photography. The plate box which forms the back of the camera holds twelve glass negatives measuring 45 × 107 mm, which are advanced by a sliding action using the hinged handle. The holder has a built-in exposure counter.

The maker's signature on the back of the camera reads 'VERASCOPE / BTE S.G.D.G. / BREVETÉS S.G.D.G./RF / PARIS / 2 7 1 0 2', the central part referring to Richard's patents which he was keen to advertise and protect. Several other numbers are stamped and written inside the camera body, one of them, '12-27', looking temptingly like a date. Certainly 1927 would be an acceptable date, given the camera's correspondence with the 1923 catalogue. It is accompanied by the original lockable leather carrying case, with key.

The Taxiphote viewer is a wooden box, 312 mm in height, the main body 220 mm square. The top is a lid which lifts up, and is lockable (this time the key has not survived). On an ivory plaque on the front is inscribed: 'LE TAXIPHOTE / STEREO-CLASSEUR / DISTRIBUTEUR AUTOMATIQUE / BREVETE S.G.D.G.' A larger plaque has instructions in English, the only indication that it was intended for the English-speaking market. This front panel, in which the eyepiece lenses are mounted, hinges down, allowing access to the mechanism inside. In the back is a ground glass window to admit light, Verascope photographs always being viewed as transparencies. The whole mechanism is mounted on a brass base within the box, a design feature shared with Richard's scientific recording instruments and ultimately derived from clockmaking.

The main maker's signature is on this internal base plate, and reads: 'BREVETÉS S G D G / RF / PARIS / RICHARD FRÈRES / CONSTRUCTEURS BREVETÉS / PARIS / 1 0 5 3'. The name 'Richard Frères' is surprising, because although Jules Richard retained the 'RF' monogram his business was not known as Richard Frères after the partnership with his brother ended in 1891 - or so the written sources lead us to believe. Nevertheless, the first version of the Taxiphote was not patented until 1899, and a date of about 1920 seems likely for this example. The purpose of this complicated but elegant mechanism is to allow up to twenty-five stereoscopic photographs to be loaded at once and viewed in any order. The transparencies were stored in trays (in cabinets which, of course, Richard supplied), and placed in the viewer in their tray. A large lever on the side of the viewer operates several simultaneous movements of the mechanism to lift a particular plate into the viewing position. A knob with pointer and circular scale from 1 to 25, on the other side of the box, chooses or indicates the photograph to be viewed.

A smaller lever allows a caption to be read by bringing a kind of miniature periscope into the field of view of the right eye: the stereograms taken with Richard's cameras allow a space for captioning in the centre, between the two images. The eyepieces focus by rack-and-pinion using small knobs on either side of the box. They can also be adjusted for ocular distance between the two lenses, using a lever which moves over a scale of millimetres. Although his instruments were marketed world-wide and are greatly prized by camera collectors today, Richard himself is very little known. One reason may be that Richard was content to allow his trade names greater prominence than his own. In the sole English-language account of the firm, Paolo Brenni considers it 'one of the most important in the history of the French precision industry'; and Richard's obituarist Victor Sabouret called him 'un représentant éminent de l'industrie de la mécanique de précision, dont il fut un des principaux promoteurs'. Richard thus exemplifies the changes that instrument making underwent at the end of the nineteenth century. He also set standards of specialization, of engineering perfection, and not least of incisive marketing.

Jules Richard (1848-1930) was a second generation instrument maker, the son of Félix Richard and nephew of the electrical instrument maker Gustave Froment. The former began business in his native Lyon about 1845, and later moved to Paris. Jules was trained partly in his father's workshop and then with several other craftsmen, including a clockmaker. He also attended evening classes. During the 1870s he worked in the manufacture of telegraphy equipment.

He is said to have collaborated at this early period with E. J. Marey, the experimental physiologist who devised electrical and photographic recording techniques. If so, this may have been the key influence on his own later inventions. Only after his father's death in 1876 did he return to the family business, then operated by his mother. He found it in serious financial difficulty, possibly resulting from Félix Richard's involvement in the Paris commune of 1870.

In 1882 he formed a partnership with his younger brother Max, as Richard Frères, and although this was dissolved in 1891 the 'RF' monogram was retained as the firm's symbol. It was just at this time that Richard was moving into the field of photographic apparatus. His brother too went into this trade, eventually becoming a partner of Léon Gaumont in founding the famous cinematographic company.

In their father's time the Richard workshop was particularly associated with a range of scientific barometers of different types. Jules Richard developed this specialism into recording barometers (or barographs), which created continuous records in ink on a slowly turning clockwork cylinder. Richard patented his design in 1880, and described himself ever afterwards as the 'Inventeur du Baromètre Enregistreur'. It was not in fact the first, but it was probably the first that was capable of mass production and reliable operation.

The success of the recording barometers led to the rapid extension of the design to other forms of scientific and industrial recording, including thermometers, pyrometers, anemometers, dynamometers, chronographs, various forms of electrical measuring, and so on. Richard enregistreurs achieved enormous success during the 1880s, and came to be widely imitated by other makers. They were adopted as official standards by the French navy in 1887, and installed at the top of the newly-built Eiffel Tower in 1889.

Stereoscopic photography was fashionable in the late nineteenth century and one has to see Jules Richard's venture into this arena as a very perceptive piece of 'niche marketing'. It was a personal passion too, and Richard remained true to his evident business philosophy of pursuing excellence in a single highly specialized product or product family: he never produced miscellaneous photographic apparatus but concentrated exclusively on stereoscopic equipment.

The Verascope was the basis of this entire side of the business. It was patented in 1893, and remained in production until the 1930s, becoming the best-selling stereoscopic camera of the period: estimates of the number sold range from about 52,000 to over 100,000. Other models were also introduced, notably the 'Glyposcope' in 1905, a simpler and cheaper version for beginners, and the 'Homéos' in 1913, one of the first still cameras to use 35 mm film. A great advantage with these cameras was that Richard provided comprehensive support services (supplies, spare parts, and so on) and a huge range of accessories and ancillary apparatus. Central to the latter was the Taxiphote viewer, patented in 1899 and again popular into the 1930s.

Richard's catalogue describes the Verascope as 'an instrument of the utmost precision' - though it also claims that in photographs taken with it 'Sunshine not only looks like sunshine; it actually gives the physical perception of light and warmth'. The first at least was true: these cameras were finely engineered, and incorporated, as we have seen, sophisticated features and innovations. The rigid, all-metal construction itself was particularly innovative, in an era of folding wooden cameras, and greatly improved its durability as well as eradicating problems of distortion.

Richard's instruments were also widely advertised and well marketed, which was an extra element in their success. Paradoxically, his feel for the market was so assured that it allowed him to defy market forces where his technical creativity required it. For instance, there was persistent criticism of the Verascope's lack of a focusing mechanism, but he argued emphatically that it was unnecessary with lenses which placed everything from ten feet to infinity in focus. More boldly, his Verascope system introduced its own unique format for stereo plates, in defiance of the universal standard of 31/4 × 63/4 inches; needless to say, his 45 × 107 mm plates quickly became accepted and popular, and other manufacturers (such as the Lumière Brothers when they introduced their colour process) adopted them.

Having been personally owned and managed by Jules Richard for thirty years, in 1921 the business became a public company, with a capital of six million francs and a workforce of about 300. In 1923 Richard gave the city of Paris six million francs to found an 'Ecole des Apprentis Mécaniciens Précisionnistes', to provide training for precision instrument makers and ensure the continuity of the skills which were so important to him. This college still exists. So too does the firm, at least in name, the present 'Société JRC' (Jules Richard Constructeurs) manufacturing precision instruments for industrial uses.

Jules Richard was one of the great scientific instrument makers and designers of his age, and equally one of the most perceptive and successful entrepreneurs. His skills and technical education were applied in an innovative and vigorous way to transform two highly specialized sectors of the instrument-making trade. In so doing he showed that even something as mundane as a stereoscopic viewer could be turned into a showpiece of precision engineering.

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